

CLAIMS:-

1. A method of treating an animal comprising the steps of:

(1) selecting from a pool of antibodies occurring in a first species of vertebrate a paratopic set the members of which are antibodies with specificity for a specific antigen or antigen epitope expressed in one or more members of said first species and not expressed in members of a second species;

(2) utilizing one or more members of said prototypic set, or paratopic fragments thereof, as an immunogen in a host of the second species, wherein said second species is selected such that the immune system of said second species does not recognise the specific antigen or antigen epitope uniquely expressed in one or more members of said first species, or said paratopic set or paratopic fragment thereof are utilized as an immunogen in an in vitro incubation system comprising cells derived from the same or a different species to produce one or more antibodies having a characteristic which is anti-paratopic with respect to the antigen or antigen epitope uniquely expressed in one or more members of said first species; and

(3) introducing anti-paratopic antibodies produced in step 2 into the same or a different member of the first species selected in step 1.

2. A method according to claim 1 wherein the prototypic antibodies are neutralizing antibodies.

3. A method according to claim 1 wherein the prototypic antibodies are human antibodies.

4. A method according to claim 3 wherein the prototypic human antibodies are naturally occurring antibodies.

5. A method according to claim 1 wherein the antibodies are human antibodies to HIV.

6. A method of immunizing a subject comprising the steps of:

(1) selecting from a pool of antibodies occurring in a first species of vertebrate a paratopic set the members of which are antibodies with specificity for a specific antigen or antigen epitope expressed in one or more members of said first species and not expressed in members of a second species;

(2) utilizing one or more members of said prototypic set, or paratopic fragments thereof, as an immunogen in a host of the second species, wherein said second species is selected such that the immune system of said second species does not recognise the specific antigen or antigen epitope uniquely expressed in one or more members of said first species, or said paratopic set or paratopic fragment thereof are utilized as an immunogen in an in vitro incubation system comprising cells derived from the same or a different species to produce one

- 20 or more antibodies having a characteristic which is
anti-paratopic with respect to the antigen or
antigen epitope expressed in one or more members of
said first species but not expressed in members of
the second species; and
- 25 (3) introducing anti-paratopic antibodies produced
in step 2 into a subject of the same species
selected in step 1 wherein said subject has not been
exposed to the immunogen which possesses said
specific antigen or antigen epitope of step 1.
7. Anti-paratopic antibodies produced according to the
method defined by claim 1.
8. A method of manufacture of an anti-paratopic
antibody efficacious against mammalian infections
comprising the steps of:
- 5 (1) selecting from a pool of antibodies occurring
in a first species of vertebrate a prototypic set
the members of which are antibodies with specificity
for a specific antigen or antigen epitope uniquely
expressed in one or more members of the first
species but not expressed in members of the second
10 species;
- (2) utilizing one or more members of said
prototypic set, or paratopic fragments thereof, as
an immunogen in a host of the second species,
wherein said second species is selected such that
15 the immune system of said second species does not

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recognise the specific antigen or antigen epitope uniquely expressed in one or more members of said first species, or said paratopic set or paratopic fragments thereof are utilized as an immunogen in an
5 in vitro incubation system comprising cells derived from the same or a different species, to produce one or more antibodies having a characteristic which is anti-paratopic with respect to the antigen or antigen epitope expressed in one or more members of
10 said first species but not expressed in members of the second species; and

(3) selecting and purifying said anti-paratopic antibodies produced according to step 2.

9. A method according to claim 8 wherein the prototypic antibodies are human antibodies.

10. A method according to claim 9 wherein the prototypic human antibodies are naturally occurring antibodies.

11. A method according to claim 8 wherein the antibodies are human antibodies to HIV.

12. A method according to claim 11 wherein the antibodies to HIV are enzymatically cleaved to remove the Fc component and conjugated to immunogenic carriers before step 2.

13. A method according to claim 11 wherein after step 2, spleen cells of the species employed in step 2 are harvested, fused to myeloma cells and the resulting hybridoma cells are cultured.

14. Monoclonal antibodies produced by the hybridoma cells in claim 13.

15. A method of immunizing a subject comprising the administration of an anti-paratopic antibody produced according to claim 8 to said subject, wherein the prototypic antibody is produced by the species of which
5 the subject is a member.

16. Anti-paratopic antibodies produced according to the method defined by claim 8.

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